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THE ANIMAL SOUL.

THE author of "Eothen" remarks that the history of Spain, from the landing of the Carthaginians to the expulsion of the Moors and Jews, is the chronicle of a protracted duello between Aryans and Semites. If the contests of the moral world should be summed up in the same way, we might say that their history for the past three thousand years has been the record of a continuous struggle between naturalists and anti-naturalists. The philosophers of Greece and Rome, Kepler, Newton, Rousseau, Goethe, Humboldt, and Darwin fought on the one side; the Buddhists, St. Augustine, St. Francis, Loyola, Calvin, and Wesley on the other. The naturalist appeals to reason and experience; the anti-naturalist appeals to authority. The one enforces his doctrine with arguments, the other with threats or entreaties. The one invites free inquiry, the other deprecates it. The one seeks to explain the phenomena of life by studying the laws of nature, the other by assuming the interference of supernatural agencies. The one insists on the essential analogies, the other on the essential contrasts, between the constitution of man and that of his fellow-creatures. The metaphysicians of all nature-loving nations inclined to the former side. Poets wove their romances about the creed of Greece, but there is no doubt that her gods were originally nothing but the deified powers of nature, the deified passions and emotions of the human soul. The worshiper of nature sought paradise on this side of the grave. He held that to enjoy is to obey, and that the wonders of creation were not made to be despised. He did not make his life a discord in the harmony of nature; he found friends and playmates among the lowliest of his fellow-creatures. The gods themselves shared the joys of earth. Life was emphatically thought worth living, and nature-worship remained the almost universal religion of mankind, till Buddha, the Nepau-

lese, proclaimed the sheer antithesis of that system. The worthlessness of earthly life and the necessity of salvation by the renunciation of earthly sympathies, were the keystone dogmas of the new creed. The westward spread of its doctrines inaugurated the era of a long war against nature. It is well known that the progress of civilization was interrupted for twelve hundred years. It cannot be denied that natural science was almost wholly superseded by supernaturalism. The constant activity of preternatural agencies was deemed as unquestionable as the influence of atmospheric currents. Speculative thinkers postulated a spook for every unknown phenomenon. Yet a still more significant, though less often admitted, characteristic of that period was its anti-naturalism. "Whatever is natural is wrong," was the shibboleth of the mediæval Buddhists. The enforced worship of sorrow darkened the life-light of countless millions. All cheerful instincts of the human soul were denounced as sinful. Earth was supposed to be, not only possessed of, but possessed by, malevolent demons. The pagan deities were changed into devils. Woden, the hunter-god, became a Wild Huntsman, Hulda a night-hag, Venus a lamia; the first May-night, when Hertha awakens the slumbering wood-spirits, became a Walpurgis-nacht with its hellish revivals. Even objects of scenic interest, the trysting-places of the nature-worshipping Druids, became "devil's pulpits," "devil's bridges," and "devil's caves." Nay, an elaborate treatise was written to prove that the actions of animals are inspired by the devil. The cosmogony of the mediæval schoolmen was, in fact, a systematic demonology. In their writings Nature and Sin (like the world and the devil) were frequently used as synonymous terms. "Natur ist Sünde, Geist ist Teufel," says the Prelate in "Faust." Hence their intense mistrust of naturalism and natural philosophy, the suppression of the Olympic games, the savage laws against "sophists and mathematicians." Hence, also, the equally bitter, but perfectly consistent, opposition to the introduction of the Copernican heresy, which they instinctively recognized as the entering wedge of a naturalistic reaction. Hence at last the forlorn-hope assault upon the doctrine of evolution, which has completed the triumph of that reaction.

For Superstition clings to the last tenable shred of her tenets. Lecky observes that multitudes "who recognize the fact that the celestial phenomena are subject to inflexible law, imagine that

the dispensation of rain is in some sense the result of arbitrary interpositions, determined by the conduct of mankind . . . It is still customary to speak of 'plagues of rain and water, sent on account of our sins,' and corresponding language is employed about the forms of disease which science has but imperfectly explained." Worst of dogmas seek shelter in mysteries, like vanquished armies in a mist, as favorable to a discreet change of front. When it became mathematically certain that our earth is not the center of the universe, but only a subordinate member of the solar system, subject to laws that could not for a moment have been suspended without subverting the established order of that system, the discomfited dogmatists fell back upon biology, and confronted their assailants with the announcement that our air-ship, though not itself a play-ball of supernatural agencies, is occupied by a certain number of supernatural passengers, distinct from all their fellow-travelers in origin and consequently in constitution and destiny; and since Darwin exploded the premises of that syllogism, its exponents seek a new basis for its intricate superstructure. In other words, the opponents of naturalism try to reconcile the doctrine of evolution not only with the harmless belief in the eternal duration of life, but with their test-dogma that man is an *alter ens*, a being governed by laws distinct from, or even opposed to, those of nature in general—an earth-child, descended perhaps from that species of quadrumana known as catarrhine monkeys, but characterized by certain preternatural qualities not shared in the least degree by any of his fellow-catarrhines.

Nor is the obstinate defense of that position disproportioned to the importance of its dogmatical significance. There is a story of a moss-trooper who assured a country laird of his personal good-will, and lamented the business necessity for blowing up his house; and an almost similar irony seems to lurk in the demure comments of the Shrewsbury philosopher and his deprecatory allusions to a system that he proceeds to attack with the explosives of his "fatally plausible theory." He traces the river of life to a chasm, which for a little space seems to hide it with its overhanging rocks. He points out the gap where the river emerges from the cliffs. He proves that its current has retained its general direction. He proves that the gravel of the delta is the detritus of the rocks at the source of the river. He demonstrates that the rains of the upper valley affect the level of the lower stream. He analyzes the waters below

and above the gap, and proves that they contain the same solutions in the same proportions of admixture. "Notwithstanding," he says, "I shall continue to entertain the most extreme respect for the hypothesis of the Pundits, who hold that the effluent of the river is essentially different from the upper part of its course; that its lower current does not move in obedience to the law of gravitation, but under the impulse of supernatural agencies, and but for the virtue of certain propitiatory rites might cease to flow; and that only the lower river will ever reach the ocean or ascend in the form of clouds to its proper home, the sky."

Yet the outworks of that hypothesis have already been carried, and its defenders begin to concentrate their forces upon the debatable ground of gradual evolution. For *Natura non facit saltum* is a reversible weapon, and if that *saltus*, a sudden leap from lower to higher planes of development, could be anywhere demonstrated, it might form a presumptive argument for the interposition of preternatural agencies. But the basis of that hope is becoming rather circumscribed. "Catastrophism" is losing ground. From year to year the progress of science leads to clearer proofs of the unity of the cosmic laws, and convinces the despisers of nature that the lowly roots of life have evolved many a marvelous flower, and that the goat-feet of Pan can climb the very summit of Olympus. The study of comparative biology has revealed the most surprising analogies between the operation of animal instinct and the functions of conscious reason on the one hand, and the action of the organic forces on the other; analogies that make it impossible to mistake the agency of the same formative law in the growth of a coral reef and the development of a system of political organization; analogies that dissolve all differences of kind into differences of degree.

"Adaptation of means to an unconscious purpose," is a definition that fails to distinguish the primitive manifestations of that law from the functions of the lower animals. The young bee observes the metrical rules of her craft with scrupulous exactness, yet, like the constructive agencies of a vegetable organism, evidently without a conscious plan. Like reason and instinct, those agencies are able to adapt themselves to special and wholly abnormal circumstances. *Convolvulus Major*, confined in a paper box with a small air-hole, will direct its tendrils toward that aperture, and, if necessary, attenuate their budding points, in order to force its way to the outer air. The thorn-liana sprouts along the ground

in a direct line toward the next convenient tree, and changes its direction if that tree is removed. In the animal body the responsibilities of a damaged organ are assumed by other organs. The eye-sight of a deaf mute, the hearing and feeling of a blind person, become abnormally acute; the skin, the lungs, undertake to eliminate substances that overtask the functional energy of the digestive organs, nay, during the progress of certain diseases the digestive apparatus often suspends its functions in order to enable the organism to concentrate all its energies on the work of expurgation, just as ants interrupt their foraging expeditions in order to repel the attack of an enemy. The preservation of life is the highest law of nature; yet, in order to avoid hopeless suffering, she hastens the event of an incurable disease, as wasps, at the approach of winter, kill the last brood of their larvæ, rather than see them starve. The faculty that enables animals to distinguish food from poison is not more marvelous than that by which our digestive organs select their proper nutriment from an infinite variety of organic and unorganic substances. For both are clearly the result of natural adaptation. In frugivorous animals, for instance, the cumulative experience of countless generations has at last become a hereditary instinct, but an instinct that fails to warn them against poisons that escaped the cognizance of their ancestors. The fruit-eaters whose intuitions enable them to distinguish the *vaccinium vacillans* from a strikingly similar poison-berry, will unhesitatingly swallow a mixture of sugar and arsenic. The imported ruminants, whose ancestors acquired their experience on the mountain-pastures of the far East, were at first deceived by the poison-herbs of the new world, but gradually learned to avoid mistakes of that sort, for the highland counties of western North Carolina have now a breed of sheep that will rather starve than touch the tempting leaves of the evergreen *calmia*. On the other hand, they have learned to appreciate various nutritive herbs which they at first refused, probably because they reminded their "instinct" of poison-plants indigenous to the highlands of central Asia. And exactly in the same way the digestive organs of the domestic dog have learned to appreciate, *i.e.*, to distinguish and utilize, the nutritive elements of bread and other substances which the stomach of his lupine ancestor would have rejected as so much worthless stuff. The teguments of the stomach are connected with those of the palate, and the selective instinct that guides the sense of

taste is but a modified manifestation of the law that governs the process of digestion and the action of chemical affinities.

And as surely as the problems of the present world are amply sufficient to account for the purpose of the highest faculties of the human mind, the origin of those faculties will yet be traced to the lowly well-springs of earthly life. No tenable theory of the relation of human reason to animal instinct has ever succeeded in demonstrating a difference of kind. Buffon's definition, for instance, that instinct acts on impulse from within, reason on motives from without, would fail to establish that distinction. For both modes of incentive influence both kinds of action ; the proportion of their respective influence only varies by imperceptible degrees. "Disposition," "character," "passion," are so many different words for the inner impulse that modifies or intensifies the external motive ; and "instinct" is not moved exclusively from within. Its manifestations are prompted by external incentives, by exigent circumstances, by favorable opportunities ; as first October frosts prompt the departure of the migratory bird, as the approaching summer of the tropics awakens his home-sickness after the temperate zone. The discovery of a convenient nook stimulates the weaver-instinct of the spider : even the imperious sexual instinct is prompted by casual opportunities.

Reason has been likened to a musical instrument that requires practice, which, once acquired, can be used or abused in an infinite variety of ways ; instinct to a musical automaton, which plays its tunes with uniform correctness, but has a rather limited *répertoire*. The instincts of the lower animals would, indeed, justify that comparison. A bee can defy any mathematician to excel the symmetry of her fabric, but her talent is limited to wax-work. The nest-building bird succeeds at the first attempt, but does not improve with practice ; the spider can only weave ; the dauber-wasp only plaster. Such instincts are one-sided business qualifications, sufficient for, but confined to, a single purpose. But as we ascend the scale of evolution we must either modify that definition of instinct, or admit that the actions of the higher animals are guided by reason. If the mental faculties of the quadrumana are so many instincts, that term could claim some curious synonyms, for those faculties can be applied and misapplied to an extravagant variety of purposes. Does instinct, "the exhorting voice of nature," teach a young Rhesus baboon to purloin the jacket of his

fellow-Rhesus and try it on like a pair of breeches? "Does reason?" it might be asked in return. But has reason, "the faculty of adapting means to conscious purposes," never been misapplied? Does the Salvation Army play less fantastic tricks before high heaven than the most eccentric baboon? Nor could it be asserted that the talents of our next relatives are unavailable for business purposes. They plan their foraging expeditions with a skill that would make the fortune of a Mexican patriot. No politician, angling for a collectorship, can surpass the *Macacus radiatus* in the art of making himself agreeable to his patron; and the holy apes of Benares enjoy the emoluments of their sinecures with all the self-asserting dignity of a Grand Metropolitan.

All the mental characteristics of the undegenerate specimens of our race have their germs in the character-traits of our tree-climbing relatives. Inquisitiveness, the presumptive root of science—though Peter Lombard enumerates it among the obstacles to salvation—is a besetting foible of the simian mind. Altruism, as modern psychologists have named the instinctive interest in the welfare of our fellow-beings, is in some of its forms almost distinctively a monkey-virtue. The little Javanese macaque, which trembles at the squeak of a mouse, will fly in the face of the fiercest bull-dog to make a diversion in favor of a helpless comrade. At the mere sight of a cruel act, the chimpanzee, though otherwise meekness personified, will break out in a violent passion, strike the ground with his fists, and protest in savage whoops. According to a story from India, that instinct seems to assert itself even in favor of distant relatives: Colonel Lawrence, of the Agra Planters' Hotel, keeps a tame leopard, which once followed its master to the freight-dépôt of the railway station. The shady platform at the north end of the dépôt is a great resort for baboons and loafers, and while the colonel talked to the receiving-clerk, his leopard strolled out to the platform, where a little street-Arab had fallen asleep upon a pile of gunny bags. The moment he approached that pile a troop of baboons (probably the *Papio Rhesus*) leaped upon the platform, and, instantly surrounding the boy, faced the intruder with bristling manes and menacing growls, evidently resolved to defend their little relative at the risk of their own lives.

Quite apart from educational influences, the same instinct sometimes manifests itself in the human species, and with the

same disregard of consequences. "Two young sons of the Burggraf," says Carlyle (Frederick, Vol. I. p. 97), "once went out riding with their tutor, when a big hound of theirs, in one of the streets of Nürnberg, accidentally tore a child; and there arose a wild mother's wail; and all the scythe-smiths turned out, fire-breathing, deaf to a poor tutor's pleadings and explainings; and the tutor, who had ridden forth in calm humor with two princes, came galloping home with only one, the smiths having driven the other into boggy ground and there caught and killed him"—though not one of them could hope to escape the wrath of the prince's father. But would the scythe-smiths have risked their lives for a young Hindoo, not to say a young Rhesus baboon? The Hindoos themselves are perhaps nearer to nature in that respect; for when Captain Elphinstone's servant had crippled a bhunder-monkey, he was repeatedly "pursued by a howling mob, and on one occasion was chased all over Delhi before he could give his pursuers the slip in the Mohammedan quarter, where a stout Unitarian kept the rabble at bay till the fugitive had effected his escape through a back-door." We may laugh at the excitement of the sympathetic mob, but a feeling much akin to theirs is perhaps the basis of the civic virtues.

Speech and music in their present development, are acquired arts rather than innate faculties, for in solitary confinement a child would grow up inarticulate; but their germ—the disposition to express emotion by modulated sounds—distinguishes the quadrumania from all other mammals. No one that has ever heard the voice of the long-armed gibbon, can forget the strange musical cadences of its cry, perfect *sofeggios* in zigzag scales and with rhythmical pauses and crescendos. A specimen in the shop of a Hamburg pet-dealer attracted a large assembly, who crowded around the house under the impression that the proprietor had imported an operatic South-Sea Islander. The Brazilian capuchin-monkey (*Cebus capucinus*), especially the white-headed varieties, have a vocal organ of still wider range, though of less musical timbre. They grunt, they pipe, they chatter, they yelp, they combine a whoop with a strange coughing guttural, they utter all the simple and compound vowels with an endless variety of modulations, evidently not prompted by the almost exclusively erotic motives of the singing-bird, but rather by an exuberance of complex emotions, which the unisons of the lower mammals would fail

to express. The mental development of the anthropoid four-handers has already reached a degree that enables them to dispense with the aid of those mysterious instincts that one is tempted to ascribe to the agency of a sixth sense ; the faculty of direction, for instance. Monkeys have no abiding homes, and are very apt to lose their way in the maze of the virgin-woods ; but they roam at will, well knowing that their mental resources will enable them to master the situation under any circumstances. With one (doubtful) exception, they build no nests, but carry their young wherever they go, and have thus emancipated themselves from the thralldom of locality, which roots the plant to its native soil.

Man has been called the "only creature whose thoughts range beyond the present life." That the thoughts of our fellow-creatures have never strayed in that direction, we may justly doubt, however soon their intuitions may have admonished them to desist from a hopeless task. I have seen a female leopard stand motionless and mute before the dead body of her mate, deaf to the voice of her keeper and all other appeals, till at last the wailings of her kittens seemed to awaken her as from a dream. Colonel Godolitz, of the Austrian army, gave me an account of a dog that exhumed the buried body of his master, and with an appealing look of inquiry turned his head toward the men that came to repair the mischief. Who shall say that no musings on the mystery that has employed philosophers as often as Trappists, passed through the souls of those animals ? Though as for "other-worldliness," or the habit of neglecting the business of life about such musings, and the consequent "yearning after a better life," the natural history of the animal soul might, indeed, fail to furnish a parallel. The right to despise this world and expect a celestial sinecure as a reward of that contempt, may be a human prerogative, but a prerogative that has always been most eagerly claimed by those whom this world has weighed and found wanting. Superannuated coquettes become brides of heaven. Every border-ruffian that fails to "get the drop" on the sheriff pities his friends that have to tarry among the vanities of a disappointing world. Unmasked hypocrites become candidates for a martyr's crown. When the French had beaten his last army, Charles IV. of Spain soothed his soul by embroidering a petticoat for an image of the Holy Virgin. This "best-known of all worlds" seems good enough to our fellow-creatures, as it did to the Greeks and

Romans and still does to all manful and successful men. Other-worldliness is the virtue of the vanquished.

It is, indeed, the difficulty of reconciling the ways of nature with the principles of pessimism, that makes the antinaturalists so loath to admit the unity of nature's laws. Like Faraday, who lived in a twofold world, a world of science and a world of faith, they would distinguish between the ghost-disturbed soul of man and the nature-guided, or automatic soul of his fellow-creatures. Animals consult their welfare by following the guidance of their instincts; their inclinations indicate the will of nature; the natural inclinations and the true interest of man are supposed to be hopelessly at variance. Nature has made happiness the normal condition of her children by associating every normal action with a pleasurable sensation. In the catechism of the antinaturalists, the sinfulness of pleasure is still a cardinal dogma. The natural affections that have aided the survival of the higher animals are considered unworthy of a model saint. "If any man come to me and hate not his father and mother, and wife and children, and brothers and sisters, yea, and his own life also, he cannot be my disciple." The greenwood harbors no pessimist. "The woodthrush does not modulate her anthems in a whining drawl; no dread of a joy-hating priest-god disturbs the gambols of the squirrel and the ærial dances of the brook-midge." But the children of man are taught to frown on the smiling face of nature. "Blessed are they that mourn," "Woe unto you that laugh," "Be afflicted and mourn and weep."

Only men that hoped to be forgiven on such terms, could "claim themselves a sole exclusive heaven." The dying Indian hopes that his faithful dog will rejoin him in the happy hunting-grounds; the horses of Achilles follow his shade to Elysium; and in the still earlier ages of the world, when the spirit of man had not yet strayed so far from its source, the repulsive exclusion of our lowly fellow-creatures was wholly unknown. The forms of plants and animals are gracefully interwoven with the tissue of Hindoo mythology and the sagas of our northern ancestors. The dog Sarama discovers the theft of the Panis; the horses of the Asmins fight in the battle of the gods; Hanuman is summoned to the council-hall of Indra. Our mediæval devotees retired to convents that never harbored a sparrow; the saints of Brahminism retired to the hills and spent their last year in communion with

the guiltless creatures of the forest, as our pathologists have again begun to study the hygienic instincts of animals, in order to correct the prejudices of our denaturalized modes of life. For pessimism is passing away like a moral epidemic, and its fever-dreams will soon cease to be confounded with the normal tendencies of the human mind.

But if antinaturalism is a symptom of disease, it must be admitted that supernaturalism requires a different definition, and the fact that the imagination of all primitive races has been haunted by ghost-terrors, opens out a field of very curious inquiry. Were the lullabies of our species chanted by priests that could not dispense with bugbears? Rather more significant seems the circumstance that ghost-fear is a night phenomenon. Midnight is the ghost-hour par excellence. The goblins hide in day-time. "It was about to speak, when the cock crew." "Up! my horses shudder—the dawn is near!" Mephistopheles warns his companion. Knight Roderick, fleeing from the pursuit of the Wild Huntsman, feels himself safe when he sees the morning light. And the same sight must for ages have cheered the hearts of our arboreal relatives. In day-time a panther would find it easier to kill ten birds than to catch one monkey. The nimble fourhander can mock his claws; they disdain to flee; they pursue him with hooting yells from tree to tree and seem to invite his attack by their defiant boldness. But the tables are turned after dark, when the fourhandlers have to rely on the vigilance of their sentries, whose sharp ears are no match for the owl-eyes of the prowling felidæ, though they give the alarm at the slightest symptom of danger. These alarms, almost nightly disturbing the sleep of untold thousands of generations, must have impressed the simian soul as well as the soul of our sylvan ancestors with an indelible dread of nocturnal apparitions, haunting a vague imagination with all sorts of monstrous shapes. "It is not books or pictures," says Charles Lamb, "nor the stories of foolish servants, which create these terrors in children; they can at most give them a direction. The stories of the chimæras and gorgons may reproduce themselves in the brain of superstition, but they were there before. They are transcripts, types: the archetypes are in us, and eternal." May we not guess that those archetypes were the night-walking *feræ* of the primeval forests? Every menagerie-keeper knows that after dark the approach of any unknown ("uncanny") object

will scare monkeys almost out of their wits. The fluttering of a window-curtain, the stealthy steps of a late visitor, a mere flitting shadow, is enough to throw them into a paroxysm of abject fear; capuchin monkeys dash to and fro like blind chickens; baboons, which in day-time would brave the attack of a mastiff, huddle together and seem disposed to lose their wits at a moment's notice. Hereditary influences have transmitted that disposition to some of their higher relatives, as Hannibal well knew when he routed his blockaders with a stampede of fiery phantoms. The sibyl of the Egerian fountain declined to appear in day-time, and professional ghost-raisers greatly prefer to begin their séances after dark. The persistence of hereditary tendencies is proportional to that of the predisposing cause. The love of forest-life has survived its modifications, the hot-house mania and the park mania of our French and British cousins; and even among nations so thoroughly secularized as the people of northern Germany, superstition still survives in the fear of night-hags.

The study of animal characteristics may furnish, indeed, many suggestive commentaries to obscure, because half-obliterated, traits of the human soul, just as the caudal appendages of our next relatives explain the meaning of certain prolongations of the human spine. Dog-trainers often notice that a whipped hound falls savagely upon his mates, and exasperated monkeys reach around into the next cage to pull the tail of an inoffensive neighbor. I had a raccoon that never failed to inflict that sort of vendetta upon some one or other, sometimes even upon the cows that passed its den on their way to the pond. Few civilized men that stomp their toes against a stone would act upon the impulse of flinging that stone at the head of a by-stander; still, the truth that misery loves company well enough to supply the want by aggressive measures, is apt to assert itself in various disguises. Rejected suitors and dyspeptic gluttons are much inclined to engage in a crusade against the vanities of this world. Tea-drinking spinsters with nervous headaches take care that their affliction shall compare favorably with that of their servant-girls. Jupiter, after the death of Semele, makes a raid upon the astonished Argives; and when Krishna, the son of Heaven, was crucified, millions of mortals were sentenced to renounce the joys of this life. *Cætera qui nescit?*

The evolution of plants and animals presents a curious but rarely noticed analogy—the sudden change, namely, that their

forms undergo at the approach of perfect development. The slowly budding rose unfolds all its leaves in a single day. In a single hour the crawling mummy that emanates from a chrysalis, becomes a broad-winged butterfly. The pheasant, the male tanager, and the bullfinch, acquire their plumage by a sudden transition from neutral to brilliant colors. Is it not as if nature had intended to furnish us a commentary, suggesting an explanation of an apparent anomaly, namely, the wide interval in the scale of development from ape to man? In the evolution of man, nature approached the climax of her work, and unfolded a flower that the teguments of the inclosing bud had partly concealed. Science might adduce still closer analogies. At the dawn of creation the march of development moved very slowly; so slowly, indeed, that Sir Charles Lyell specially commends the Darwinian theory for "enabling us to dispense with a law of progress as a necessary accompaniment of variation." Myriads of ages after the first appearance of life on this planet, he tells us, "there were still as many beings of the simplest structure in existence as ever." Ages may also have passed before our hirsute ancestors learned to exchange their stone clubs for bronze hatchets. Within the past thirty years science has surpassed the progress of thirty centuries of faith. On the higher planes of life, evolution strides with wider steps. In tracing those steps across the gap of the problematic transition, we should remember to compare the nearest points of approach: the advanced dawn of animal intelligence, and the first sun-glimpse of human reason. That sun seemed to rise in a mist. The occupations of our early ancestors were confined to defensive and offensive warfare, their children were cradled in the bulrushes of the lacustrine swamps that protected them against the approach of their enemies, in Lernean bogs and Swiss lagoons, while they left the fair uplands to their four-footed rivals. The anthropoid apes, too, are swamp-dwellers, and without pile-ports manage to hold their own against all quadruped aggressors. The gorilla, and, according to Brehm, also the nshiego and a nest-building ape of the upper Gaboon, stampede elephant herds by breaking off clubs and following the troop with furious yells. The first biped hunters probably used no other weapons. The poor hill-folk of the Malabar Ghauts eat several varieties of venomous snakes, which they catch by pinning them to the ground with a forked stick. But in times of scarcity the Abyssinian kutch-baboon takes greater

risks, for he catches scorpions with his hands and breaks off their tails before they have time to twist around. The vocabulary of the Veddahs, the probable aborigines of Ceylon, contains fewer than a hundred words ; that of the white-headed capuchin at least twice as many expressive sounds. Sir Emerson Tennent says that a Veddah hunter's attempts at conversation sounded to him like a combination of clicks and rasping grunts ; the long-armed gibbon and the capuchin pronounce their vowels as distinctly as a trained vocalist, and modulate them to express all possible degrees of approbation, displeasure, fear, desire and surprise. If the Veddahs can ever be even half civilized, it is certain that they have declined all invitations in that direction for the past three thousand years ; and what compulsory education might do for the anthropoid apes we may imply by comparing, first, the mental status of the domestic dog with that of his wild relatives, the *canis pictus* and the Syrian jackal ; and secondly, the docility of the ape with the stubborn misanthropy of the wild dog.

The social virtues are supposed to constitute a generic distinction of the human soul ; but the difference between the social systems of Great Britain and Dahomey is greater than the difference between the family life of the African baboons and that of the Papua Islanders. Fish trust their spawn to the sea ; the female tortoise disdains to hatch her eggs, though she deposits them in a kind of nest ; the male wolf leaves the care of his whelps to their mother ; but the adult baboons of both sexes not only attend to the wants of their own offspring, but watch over orphans and the stray youngsters of a neighboring tribe, and nurse their sick with a solicitude that shames the perfunctory services of many professional human nurses. I have seen a female *Chacma* nurse a wounded babuin, or Berber-monkey, rock him to and fro with a soothing purr, peep under his plaster, but hastily replace it when his twitching betrayed pain, cover him with her own blanket, and for hours lick around the wounded spot and rub it with her finger-tips. In their native rocks a whole tribe of the sympathetic brutes will rush to the rescue of a crippled brother and lug him off to a place of safety, where the champions of the encounter surround him, strutting grotesquely in the pride of their hearts, or souls, though the antinaturalist would probably grudge them the honor of a term that he would apply to the mental apparatus of the Polynesian, who cures his sick children in the

smoke-house and sells his wife for a glass of grog. Yet we must admit the probability that the Chacmas have acquired their virtues without the aid of preternatural revelations. Sympathy led to co-operation; co-operation enabled them to hold their own against enemies that eliminated the less sympathetic varieties of their species. Natural selection favored the development of an altruistic disposition, as surely as any morbid aberration of that tendency would have been speedily suppressed. The penalties of unfitness would have been enforced against those whose altruism had tempted them to seek glory in self-torture, to whine instead of fight, to hate their friends and children and bestow their affection upon their enemies. Such forms of virtue would have succumbed in the struggle for existence, as they succumbed in the struggle of the Protestant revolt; but by just as much as altruism conduced to the welfare of the species, it was favored and perpetuated.

Have the social virtues of the civilized nations been developed in any other way? We see no reason for that assumption. The "power behind phenomena" acts by self-regulating laws.

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